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(54) **QUICK RELEASE WEIGHT RETAINING SYSTEM**

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(52) **U.S. Cl.**
CPC ***A63B 21/075*** (2013.01); ***A63B 21/0724*** (2013.01); ***A63B 21/0728*** (2013.01)

(58) **Field of Classification Search**
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See application file for complete search history.

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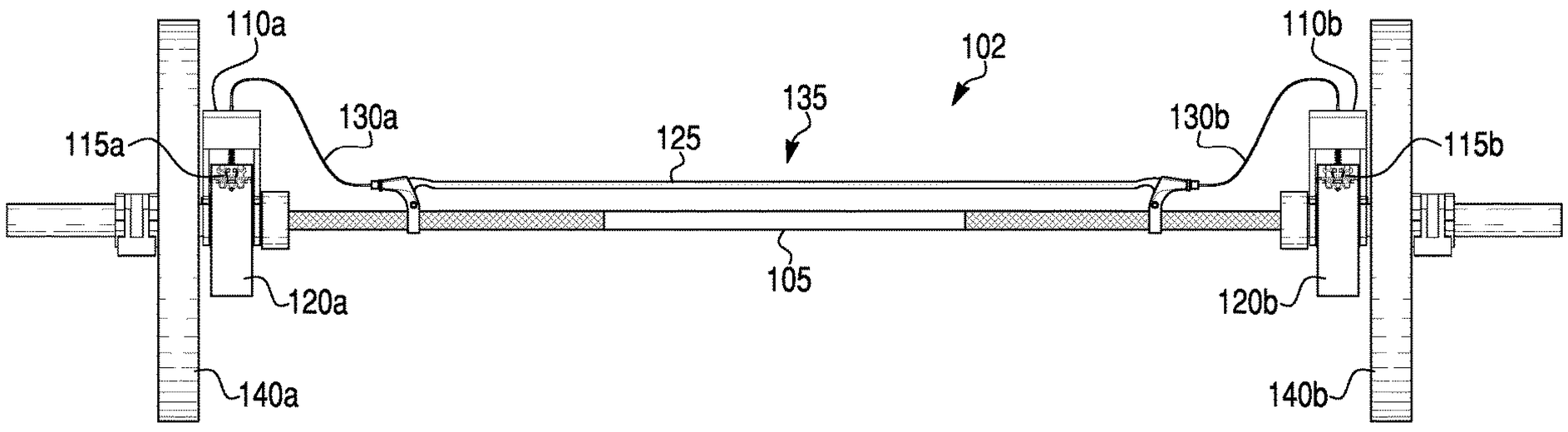
(57) **ABSTRACT**

Disclosed herein is a quick release weight retaining system configured to improve the safety and effectiveness of a resistance training routine. In an exemplary embodiment, the system includes a weight retainer that is removably mounted to a weight support member. The weight retainer includes an engaging apparatus that can retain and safely release a weight load during exercise. The weight is released by way of the exerciser activating a trigger. A weight can be safely and securely mounted to the weight retainer when pushed against the engaging apparatus.

20 Claims, 6 Drawing Sheets



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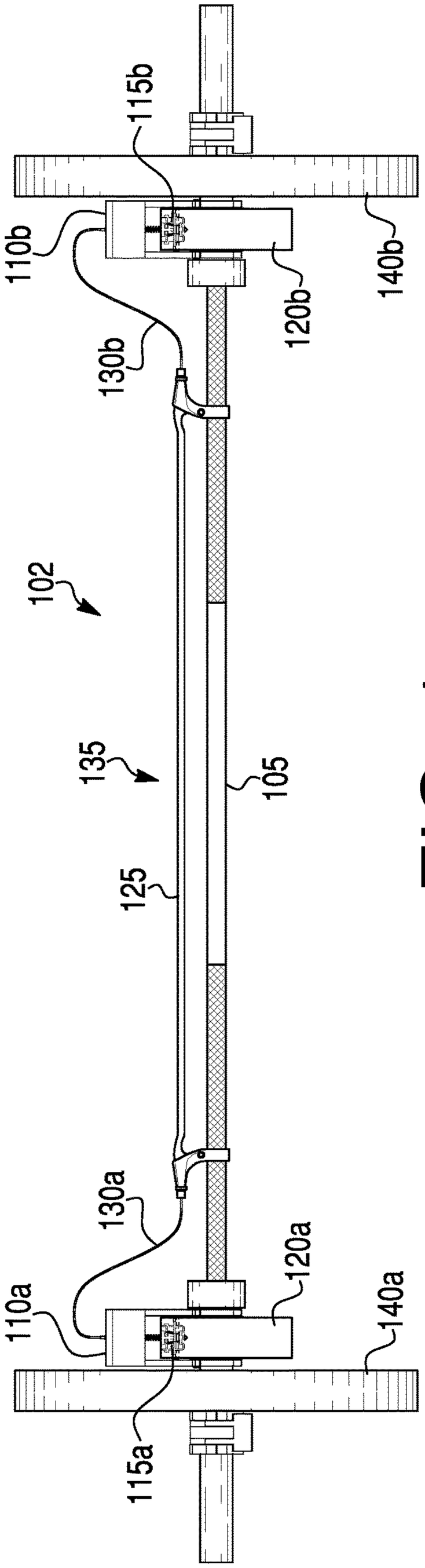

115b
110b
130b
120b
140b
102
135
105
125
130a
120a
110a
140a
115a

FIG. 1

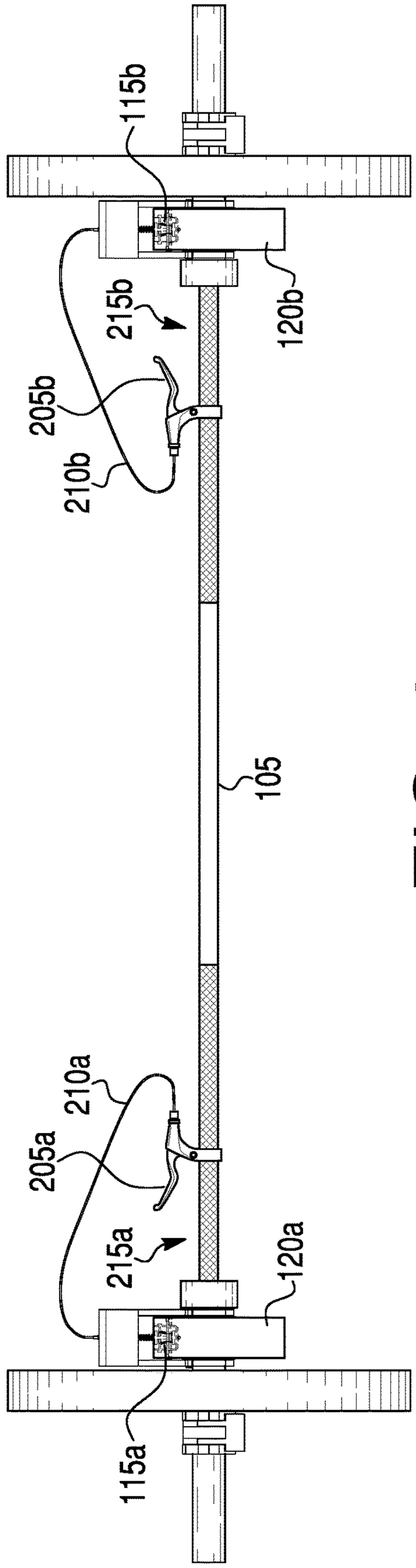

115b
215b
120b
205b
210b
105
210a
205a
215a
120a
115a

FIG. 2

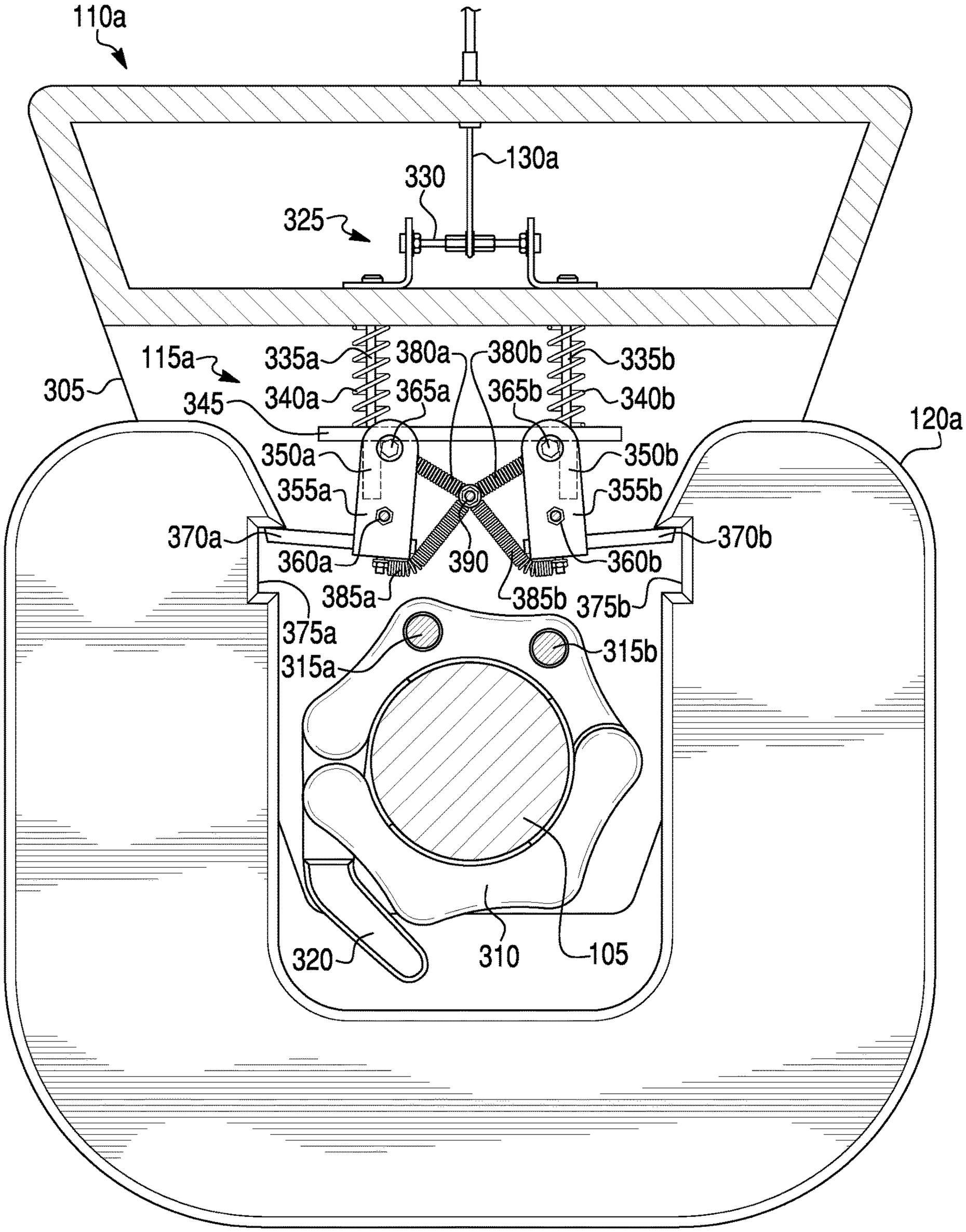

110a
130a
330
325
115a
335a
380a
380b
335b
305
345
340a
365a
365b
340b
120a
350a
350b
355a
355b
370a
370b
360a
390
360b
385a
385b
375b
375a
315a
315b
320
310
105

FIG. 3

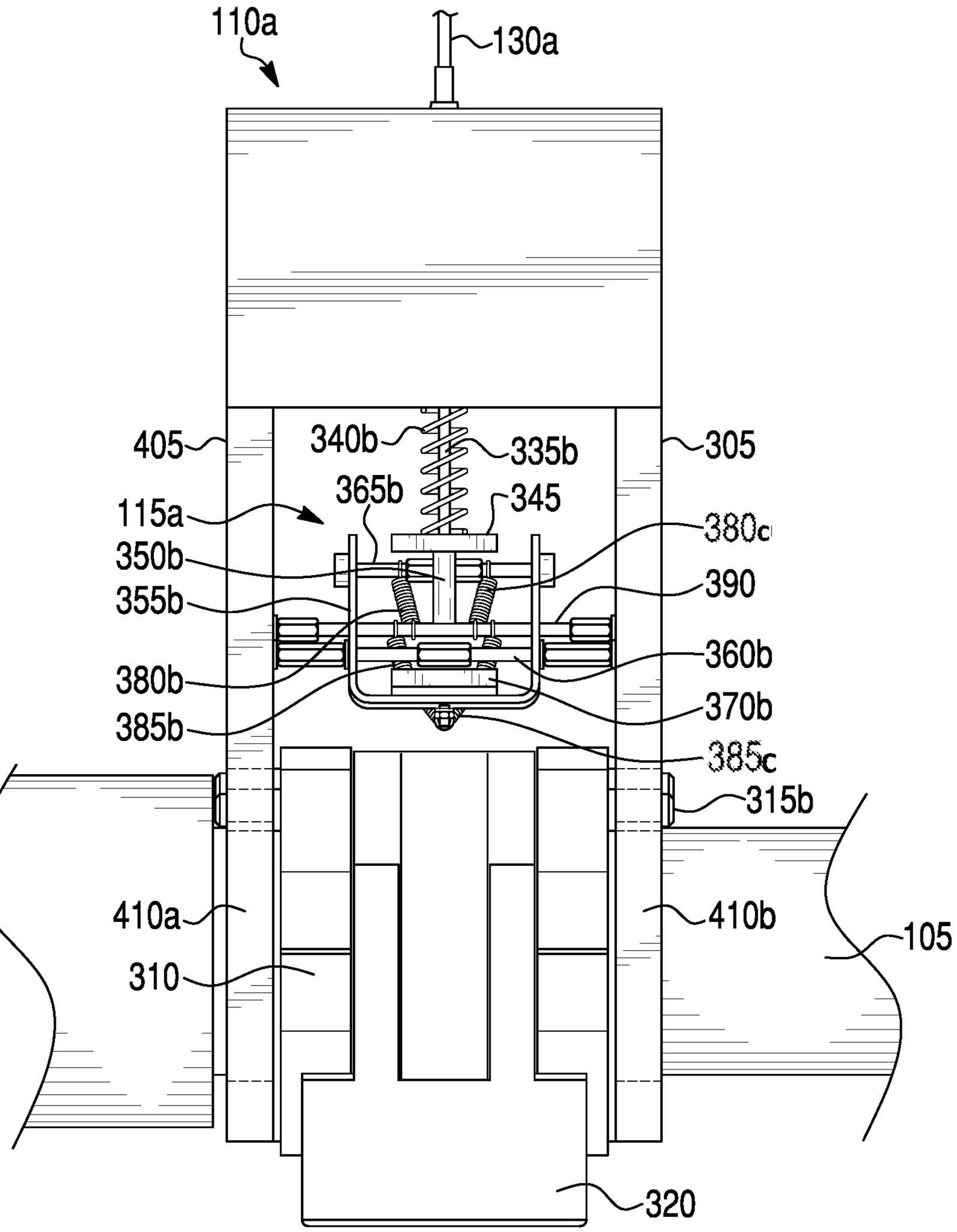
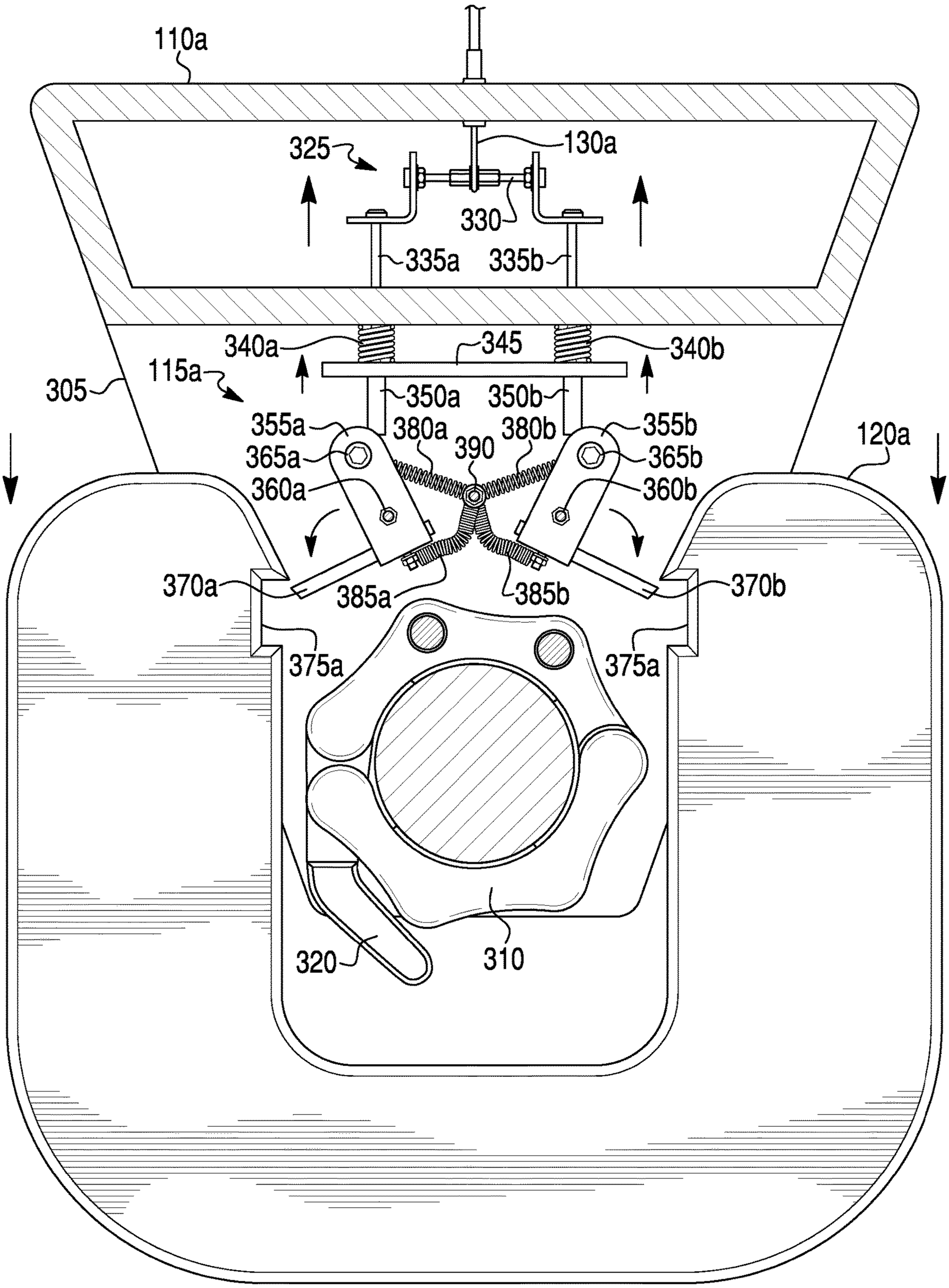

110a
130a
405
340b
335b
305
365b
345
115a
380c
350b
390
355b
360b
380b
370b
385b
385c
315b
410a
410b
105
310
320

FIG. 4


110a
325
130a
330
335a
335b
340a
345
340b
115a
305
350a
350b
355a
380a
390
380b
355b
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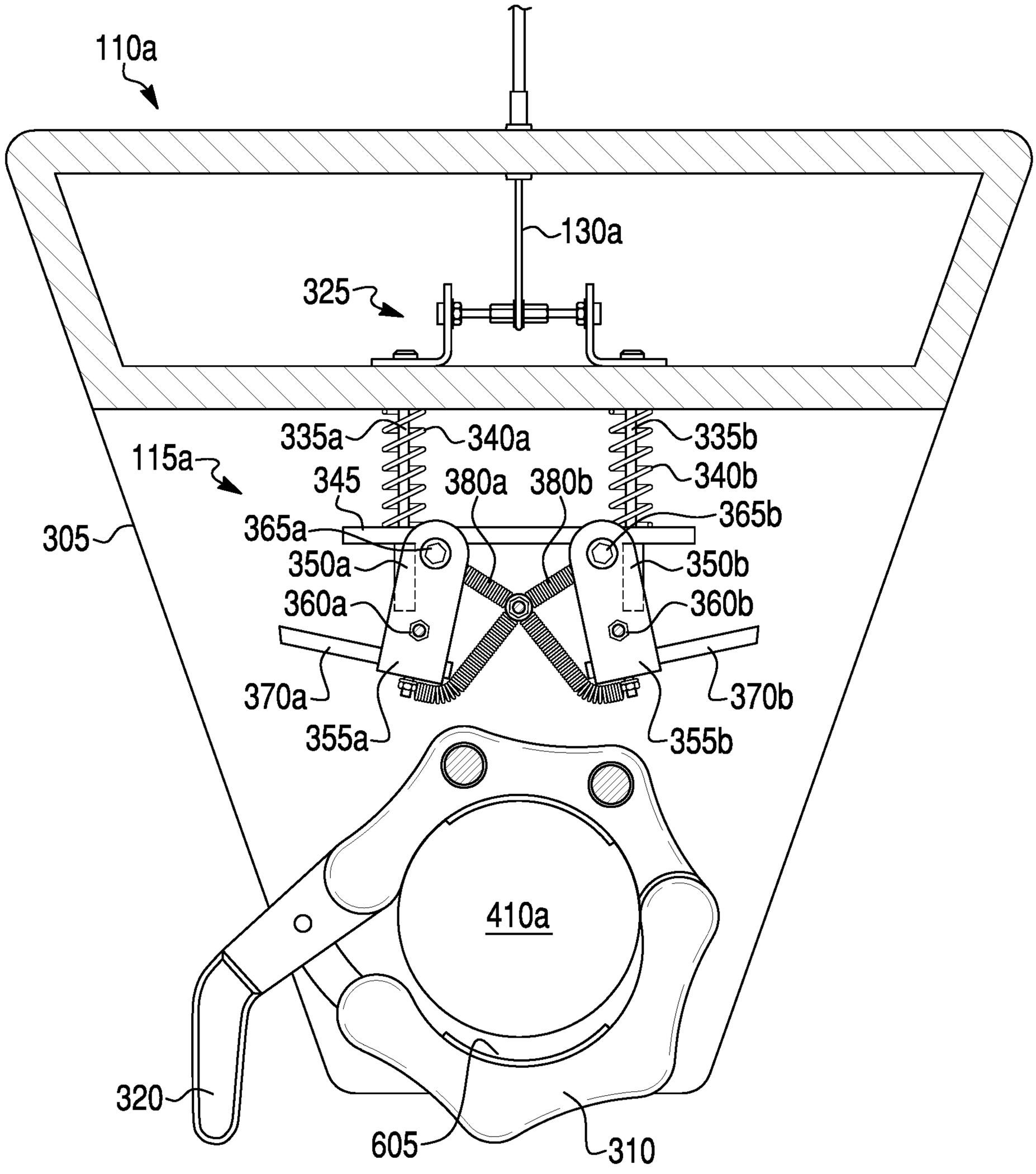
360a
360b
120a
370a
385a
385b
370b
375a
375a
320
310

FIG. 5


110a
130a
325
335a
340a
335b
115a
345
380a
380b
340b
365b
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365a
350a
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360b
370a
370b
355a
355b
410a
320
605
310

FIG. 6

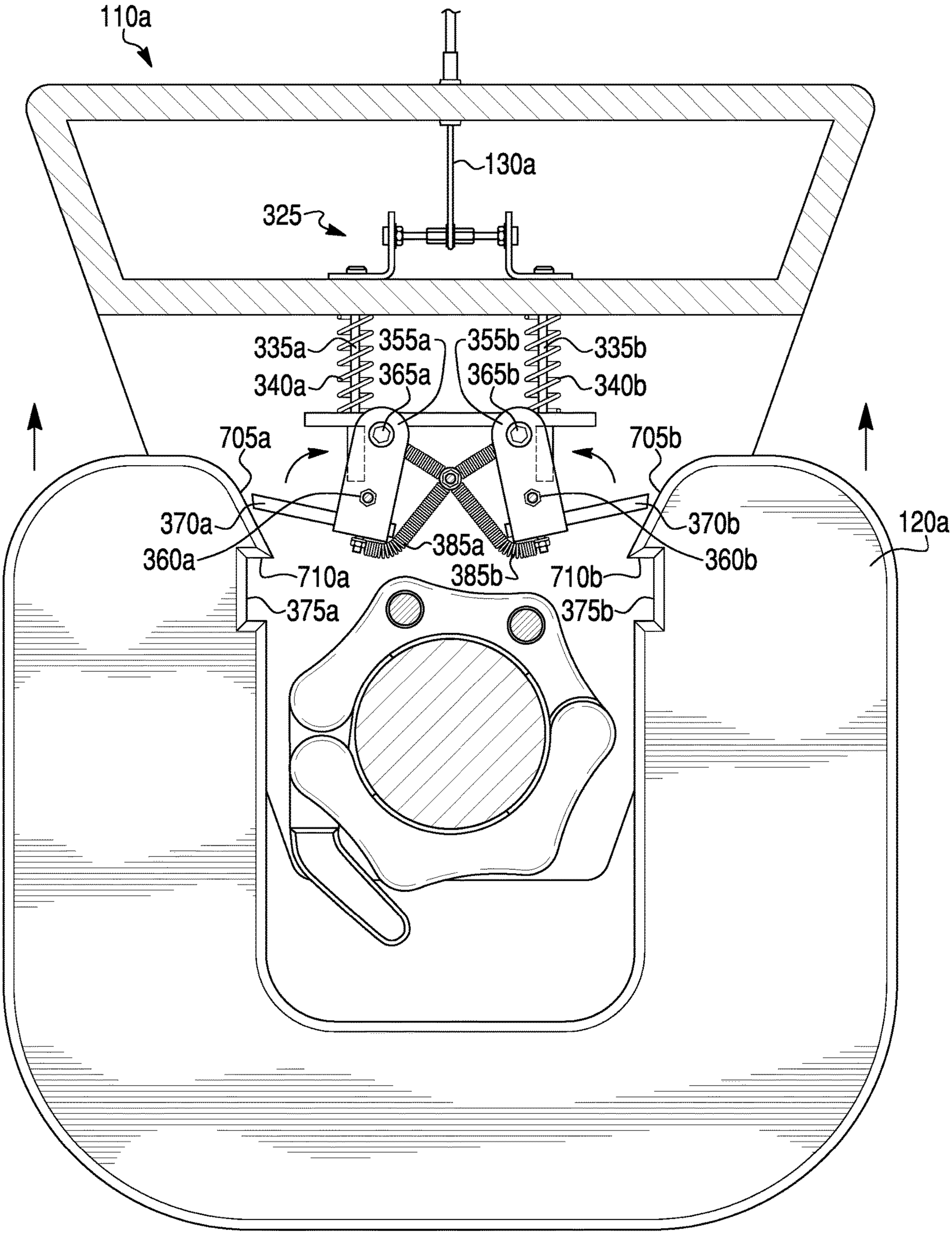
110a
130a
325
335a
355a
355b
335b
340a
365a
365b
340b
705a
705b
370a
370b
120a
360a
385a
360b
710a
385b
710b
375a
375b

FIG. 7

QUICK RELEASE WEIGHT RETAINING SYSTEM

FIELD

The present invention relates to weight retaining systems. More particularly, the present invention relates to weight retaining systems configured to operatively release a weight by activation of a trigger.

BACKGROUND

Traditional weightlifting systems, such as weight stack-based systems, and free weight systems are commonly used in resistance training fitness regimes. Such resistance training regimes are used to enhance strength, muscle size and muscle density. Other significant benefits of weight-based resistance training include improved bone density, improved mobility, improved bodyweight management, and improved cardiovascular condition.

One method employed in weight-based resistance training regimes is commonly referred to as drop-setting. Drop-setting involves beginning a weightlifting "set" with a relatively heavy load, applied for example by mounting several barbell weight plates onto a barbell used for the particular exercise. During the set, the exerciser performs periodic repetitions of the lifting exercise, until the exerciser cannot perform an additional repetition. At that point during the set, a portion of the load is removed from the barbell so that the exerciser can perform additional repetitions with the reduced load. This sequence of repetitions and load reduction continues for as many cycles as the exerciser desires.

One inconvenience attendant to traditional drop-set execution is that there is an undesirable pause and interruption of the set at the point where the load must be reduced. For example, an additional participant or participants are required to be on hand to quickly strip weight from the barbell to ready it for the next group of repetitions to be performed by the exerciser. Alternatively, if the exerciser is alone, she or he must rack the barbell safely against the pull of gravity and strip the weights her or himself. This causes a particularly undesirably pause during the drop-set and disrupts the exerciser's overall rhythm and momentum. Additionally, this pause allows muscle recovery which negatively impacts the effectiveness of the drop-set.

An additional challenge attendant to resistance training arises in the case where free weights are used for exercises where the exerciser's body is positioned between the weight, such as a barbell, and the training floor. Such exercises include the bench press which requires the barbell to be pressed above the exerciser's face, neck, and chest area repeatedly in an up and down motion. A safety risk arises when the exerciser's muscles fatigue such that a press repetition can no longer be performed. If another participant is not on hand to assist the exerciser in racking the barbell safely against gravity, then the barbell may come to rest on the exerciser's chest, neck or face area potentially causing severe injury.

Similar risks arise in connection with the free weight barbell squat exercise, as another example. The squat is performed by resting the weight loaded barbell along the shoulders behind the neck. The exerciser bends at the knees and hips moving up and down perpendicular to the floor. If the exerciser finds her or himself in the lower position and has fatigued so as not to be able to rise to the standing position, the exerciser may be forced to simply drop the barbell down her or his back in an uncontrolled fashion. This too can lead to severe injury to the exerciser and those around them.

What is desirable is an innovative weight system that addresses these disruptions, inconveniences, and safety risks. Specifically, what is desirable is a system configured to permit the exerciser to safely reduce the load employed during exercise without requiring additional participants, without introducing an unwanted pause during the exercise, and without otherwise disrupting the rhythm of the exercise.

SUMMARY

An exemplary embodiment of the present invention comprises a quick release weight retaining system that comprises a first weight retainer removably mountable to a weight support member. The first weight retainer comprises a first engaging apparatus. The first engaging apparatus is configured to releasably retain a first weight. The exemplary system also includes a first trigger coupled to the first engaging apparatus configured to release the first weight when the trigger is activated.

In another exemplary embodiment, a quick release weight retaining system comprises a first weight retainer removably mountable to a weight support member. The first weight retainer comprises a first engaging apparatus. The exemplary embodiment also comprises a first weight configured to releasably engage the first engaging apparatus, and a first trigger coupled to the first engaging apparatus configured to release the first weight when the trigger is activated.

In another exemplary embodiment, a quick release weight retaining system comprises a first weight retainer mounted to a barbell. The first weight retainer comprises a first engaging apparatus. The first engaging apparatus is configured to releasably retain a first weight. A first trigger is coupled to the first engaging apparatus and is configured to release the first weight to a force of gravity when the trigger is activated, wherein the first weight falls away from the barbell upon release.

BRIEF DESCRIPTION OF DRAWINGS

These and other features, aspects, and advantages of the present invention will become better understood with regard to the following descriptions, claims, and accompanying drawings. It is to be noted, however, that the drawings illustrate only several embodiments of the invention and are therefore not to be considered limiting of the invention's scope as it can admit to other equally effective embodiments.

FIG. **1** is a side view of an exemplary quick release weight retaining system according to an exemplary embodiment of the present invention.

FIG. **2** is a side view of an exemplary quick release weight retaining system according to an exemplary embodiment of the present invention.

FIG. **3** illustrates a weight retainer and engaging apparatus according to an exemplary embodiment of the present invention.

FIG. **4** illustrates a side view of a weight retainer illustrating detail of the mechanics of an engaging apparatus.

FIG. **5** illustrates a weight retainer and engaging apparatus releasing a weight, according to an exemplary embodiment of the present invention.

FIG. **6** illustrates a weight retainer and engaging apparatus without a weight engaged, according to an exemplary embodiment of the present invention.

FIG. **7** illustrates a weight retainer and engaging apparatus receiving a weight, according to an exemplary embodiment of the present invention.

DETAILED DESCRIPTION

So that the manner in which the features and advantages of embodiments of methods and systems of the present invention may be understood in more detail, a more particular description of the present invention briefly summarized above may be had by reference to certain embodiments thereof that are illustrated in the appended drawings, which form a part of this specification. The drawings illustrate only certain embodiments of the present invention and are, therefore, not to be considered limiting of the scope of the present invention which includes other useful and effective embodiments as well.

FIG. **1** is a side view of an exemplary quick release weight retaining system **102** according to the present invention. System **102** comprises a weight support member **105**. In this exemplary embodiment, weight support member **105** comprises a standard Olympic weightlifting barbell. In alternate embodiments, weight support member **105** may be any apparatus the supports weight against gravity, including hand sized dumbbells, and other weight bearing devices used for resistance training.

FIG. **1** illustrates weight retainers **110***a* an **110***b* mounted to weight support member **105**. In this exemplary embodiment weight retainers **110***a* and **110***b* may be fixedly mounted to weight support member **105**, such as by way of fasteners or welding, as examples. Alternatively, in this exemplary embodiment, weigh retainers **110***a* and **110***b* may be removably mounted to weight support member **105**, as will be described in more detail with reference to FIGS. **3**, **4**, **5** and **6**.

Weight retainers **110***a* and **110***b* comprise engaging apparatus **115***a* and **115***b*, respectively. In this exemplary embodiment, engaging apparatus **115***a* and **115***b* are integral to weight retainers **110***a* and **110***b*, respectively. Details of exemplary embodiments of engaging apparatus **115***a* and **115***b* will be shown and described with reference to FIGS. **3** through **7**.

FIG. **1** further illustrates weights **120***a* and **120***b* releasably engaged to, and retained by, engaging apparatus **115***a* and **115***b*, respectively. Engaging apparatus **115***a* and **115***b* retain weights **120***a* and **120***b* against the force of gravity, including during the repetitive movement of weight support member **105**, for example during the execution of an exercise such the bench press.

FIG. **1** further illustrates trigger **125**. In this exemplary embodiment, trigger **125** may be fixedly or removably coupled to weight support member **105**. Trigger **125** is coupled to engaging apparatus **115***a* and **115***b*. In this exemplary embodiment, trigger **125** is coupled to engaging apparatus **115***a* and **115***b* by respective pull cables **130***a* and **130***b*. In this preferred embodiment, when trigger **125** is depressed in the direction indicated by arrow **135**, pull cables **130***a* and **130***b* are pulled relative to engaging apparatus **115***a* and **115***b* respectively, thereby causing engaging apparatus **115***a* and **115***b* to release weights **120***a* and **120***b* to the force of gravity. In this exemplary embodiment, upon such release weights **120***a* and **120***b* fall away from weight support member **105**. Such release thereby reduces the weight loaded to weight support member **105**.

FIG. **1** further illustrates additional weights **140***a* and **140***b*. Additional weights **140***a* and **140***b*, and other such weights as desired, can be loaded to weight support member **105**, that together with weights **120***a* and **120***b* sum to a starting load for an exerciser's exercise. At such time during the exercise as the exerciser desires, trigger **125** can be activated to release weights **120***a* and **120***b*, thereby reducing the load on weight support member **105**. This reduction occurs in real time, during the exercise, without creating an undesirable pause during the exercise, and without requiring additional participants on hand to remove weights.

Turning to FIG. **2**, FIG. **2** illustrates an alternative exemplary embodiment of the present invention. More specifically, FIG. **2** illustrates two independent triggers **205***a* and **205***b*. In this exemplary embodiment triggers **205***a* and **205***b* are coupled to engaging apparatus **115***a* and **115***b* by way of pull cables **210***a* and **210***b*, respectively. In this preferred embodiment, when triggers **205***a* and **205***b* are depressed in the direction indicated by arrows **215***a* and **215***b*, respectively, pull cables **210***a* and **210***b* are pulled relative to engaging apparatus **115***a* and **115***b* respectively, thereby causing engaging apparatus **115***a* and **115***b* to release weights **120***a* and **120***b* to the force of gravity. In this exemplary embodiment, upon such release weights **120***a* and **120***b* fall away from weight support member **105**. Such release thereby reduces the weight loaded to weight support member **105**.

In the preferred operation of this exemplary embodiment, triggers **205***a* and **205***b* are depressed simultaneously to release weights **120***a* and **120***b* at substantially the same time, thereby maintaining a balanced load, laterally, on weight support member **105**. Separate triggers **205***a* and **205***b* may nevertheless be desirable under some circumstances. For example, when loading engaging apparatus **115***a* and **115***b* with weights **120***a* and **120***b*, it will sometimes be useful to release weight engagement as to one side or the other, without at the same time releasing weight engagement on the other side. For example, when both sides are loaded but it is determined that a different plate is desired for only one side, just that side can be released. In addition, separate triggers **205***a* and **205***b* may be a desirable configuration offering advantages for sales, distribution, and maintenance of the quick release weight retaining system. For example, a single bundle of components for only one side can be marketed when separate triggers are available. Additionally, a single trigger can be replaced in the event that only one side requires such maintenance.

Turning to FIG. **3**, FIG. **3** illustrates a weight retainer and engaging apparatus, as well as other system components, according to one exemplary embodiment. More specifically, FIG. **3** illustrates detail of weight retainer **110***a*, engaging apparatus **115***a*, and weight **120***a*, as well as other system components. The system components, including the components of engaging apparatus **115***a* are identified and described with reference to FIG. **3**, and FIG. **4**. Details of their operation are described below with reference to FIGS. **5** through **7**.

FIG. **3** is a cut-away side view of weight retainer **110***a*. Weight retainer **110***a* comprises rear sidewall **305**. A front side wall is cut away and not shown, so that other system components including weight **120***a* and engaging apparatus **115***a* can be illustrated. Also shown is support member **105** in side cut-away view. Weight retainer **110***a* further comprises collar **310**. Collar **310** is fixedly attached to rear wall **305** with fasteners, such as screws or bolts, **315***a* and **315***b*. Fully assembled, collar **310** is preferable similarly fixedly attached to a front wall of weight retainer **110***a* (not shown in FIG. **3**) that opposes rear wall **305**.

In this exemplary embodiment, Collar **310** serves to removably fix weight retainer **110***a* to support member **105**.

More specifically, in FIG. **3** collar **310** is shown in a closed state. Collar **310** includes lever **320**. When lever **320** is pressed inward towards collar **310**, as shown in FIG. **3**, collar **310** compresses around support member **105** so as to hold weight retainer **110***a* firmly on support member **105**.

FIG. **3** further illustrates engaging apparatus **115***a*. Engaging apparatus **115***a* comprises support bracket **325**. Support bracket **325** comprises cross beam **330**. Cable **130***a* is coupled to crossbeam **330**.

In this exemplary embodiment, engaging apparatus **115***a* further comprises lock pins **335***a* and **335***b*, surrounded by vertical springs **340***a* and **340***b*. Lock pins **335***a* and **335***b* extend through an elevating cross beam **345**. Lock pins **335***a* and **335***b* each terminate in pin portions **350***a* and **350***b*, respectively (pin portions **350***a* and **350***b* shown in dotted line).

Engaging apparatus **115***a* further comprises swiveling brackets **355***a* and **355***b*. Swiveling brackets **355***a* and **355***b* comprise rotating bolts **360***a* and **360***b*, respectively. Rotating bolts **360***a* and **360***b* comprise fasteners, such as screws or bolts, which extend from rear wall **305**, through brackets **355***a* and **355***b*, respectively, and when fully assembled, extend to the to a front wall of weight retainer **110***a*, not shown in FIG. **3**.

In this exemplary embodiment, swiveling brackets **355***a* and **355***b* further comprise catch bolts **365***a* and **365***b*, respectively. Catch bolts **365***a* and **365***b* comprise fasteners, such as screws or bolts, which extend from one side of respective swiveling brackets **355***a* and **355***b*, to the other side of the respective brackets, as will be shown in more detail with reference to the view of FIG. **4**.

Engaging apparatus **115***a* further comprises rotating catch plates **370***a* and **370***b*. Rotating catch plates **370***a* and **370***b* extend laterally from the bottom of swivel brackets **355***a* and **355***b*, respectively. Rotating catch plates **370***a* and **370***b* engage weight **120***a*. Specifically, weight **120***a* comprises engaging elements **375***a* and **375***b*, which in this exemplary embodiment are notches as shown. Rotating catch plates **370***a* and **370***b* support weight **120***a* against gravity by extending into engaging elements **375***a* and **375***b*, respectively. Swiveling brackets **355***a* and **355***b* are inhibited from rotating, which would otherwise permit weight **120***a* to fall away, because terminating pin portions **350***a* and **350***b* prevent catch bolts **365***a* and **365***b* from moving forward.

Engaging apparatus **115***a* further comprises upper tensions springs **380***a* and **380***b*, and lower tension springs **385***a* and **385***b*. Upper tensions springs **380***a* and **380***b* are attached at one end to catch bolts **365***a* and **365***b*, respectively, and at the other end to stationary bolt **390**. In this exemplary embodiment, stationary bolt **390** comprises a fastener, such as a screw or bolt, extending from rear wall **305** to a front wall of weight retainer **110***a*, not shown in FIG. **3**. Lower tensions springs **385***a* and **385***b* are attached at one end to the bottom of swiveling brackets **355***a* and **355***b*, respectively, and at the other end to stationary bolt **390**.

Turning to FIG. **4**, FIG. **4** provides a side view illustrating detail of weight retainer **110***a*, engaging apparatus **115***a*, as well as other system components according to one exemplary embodiment. Specifically, FIG. **4** shows fully assembled weight retainer **110***a* removably mounted to support member **105**. Weight retainer **110***a* includes both rear wall **305** and a front wall **405**. The view of FIG. **4** is looking from the right side with reference to FIG. **3**.

FIG. **4** illustrates cable **130***a* coupling into weight retainer **110***a*. Vertical spring **340***b* is shown surrounding lock pin **335***b*. Lock pin **335***b* terminates in pin portion **350***b*. Lock pin **335***b* extends through elevating cross beam **345**.

Swiveling bracket **355***b* is rotatably mounted on rotating bolt **360***b*. Catch bolt **365***b* extends through the width of swivel bracket **355***b*. Rotating catch plate **370***b* is attached to the bottom of swiveling bracket **355***b*.

Upper tension spring **380***b*, and in this exemplary embodiment, an additional upper tension spring **380***c*, are attached at one end to catch bolt **365***b* and at the other end to stationary bolt **390**. Lower tension spring **385***b*, and in this exemplary embodiment, an additional lower tension spring **385***c*, are attached at one end to the bottom of swiveling bracket **355***b*, and at the other end to stationary bolt **390**.

FIG. **4** further illustrates collar **310** with lever **320** in the closed position so as to removably fix weight retainer **110***a* to support member **105**. Additionally, FIG. **4** illustrates sidewall openings **410***a* and **410***b*, show by way of dotted lines, in front wall **405** and rear wall **305**, respectively. In this exemplary embodiment, sidewall openings **410***a* and **410***b* are substantially circular in shape and aligned with the opening of collar **310** so as to facilitate the attachment and removal of weight retainer **110***a* to and from support member **105**.

Turning to FIG. **5**, FIG. **5** illustrates the releasing operation of one embodiment of the present invention. Specifically, when trigger **125** is depressed (FIG. **1**), or similarly trigger **205***a* is depressed (FIG. **2**), cable **130***a* is bulled upward, raising support bracket **325**. Lock pins **335***a* and **335***b*, including pin portions **350***a* and **350***b* are moved upwards, along with elevating cross beam **345**. Vertical springs **340***a* and **340***b* are compressed.

Pin portions **350***a* and **350***b* are thereby moved out of obstructing the forward motion of catch bolts **365***a* and **365***b*, respectively. Lower tension springs **385***a* and **385***b* urge the bottom of swivel brackets **355***a* and **355***b*, respectively, inward, thereby rotating brackets **355***a* and **355***b* around rotating bolts **360***a* and **360***b* respectively. This rotation causes rotating catch plates **370***a* and **370***b* to rotate out of engaging elements (notches) **375***a* and **375***b*, respectively, releasing weight **120** to the force of gravity.

FIG. **6** illustrates an exemplary embodiment of the present invention returned to an unloaded condition. More specifically, as illustrated in FIG. **6**, upper tensions springs **380***a* and **380***b* have urged swiveling brackets **355***a* and **355***b*, respectively, inward, rotating around rotating bolts **360***a* and **360***b*, respectively. Furthermore, vertical springs **340***a* and **340***b* have urged lock pins **335***a* and **335***b*, including pin portions **350***a* and **350***b* downward, situating pin portions **350***a* and **350***b* so as to obstruct the forward movement of catch bolts **365***a* and **365***b*, respectively.

Additionally, FIG. **6** illustrates collar **310** in an open state. The open state is accomplished by moving lever **320** outward, which has the effect of increasing the diameter of a central opening **605** of collar **310**. In this open state, according to particular embodiments, weight retainer **110***a* may be mounted on or removed from weight support member **105** (FIG. **1**), which may be, in some examples, a traditional Olympic barbell.

Turning to FIG. **7**, FIG. **7** illustrates the operation of an exemplary embodiment of the present invention for engaging, or mounting, a weight to weight retainer **110***a*. More specifically, according to this embodiment, weight **120***a* is pushed upwards, contacting rotating catch plates **370***a* and **370***b*. In this exemplary embodiment, weight **120***a* comprises slanted surfaces **705***a* and **705***b*, which contract catch plates **370***a* an **370***b*. As catch plates **370***a* and **370***b* slide along surfaces **705***a* and **705***b*, respectively, swivel brackets

355*a* and 355*b* rotate around rotating bolts 360*a* and 360*b*, respectively, against a pulling force from lower tensions springs 385*a* and 385*b*, respectively.

In this exemplary embodiment, engaging elements 375*a* and 375*b* each comprise an upper lip 710*a* and 710*b*, respectively. When catch plates 370*a* and 370*b* traverse past upper lips 710*a* and 710*b*, respectively, catch plates 370*a* and 370*b* become situated inside engaging elements 375*a* and 375*b*, respectively. At that point, lips 710*a* and 710*b* rest on top catch plates 370*a* and 370*b*, respectively, as illustrated in FIG. 3. As a result, engaging apparatus 115*a* including catch plates 370*a* and 370*b* suspend weight 120*a* against gravity until released by activation of switch 125 (FIG. 1) or similarly by activation of switches 205*a* and/or 205*b* (FIG. 2).

Consequently, an innovative weight system is provided according to particular embodiments of the present invention that addresses disruptions, inconveniences, and safety risks attendant to conventional resistance training. Specifically, a system is provided permitting the exerciser to safely reduce the load employed during exercise without requiring additional participants, without introducing an unwanted pause during the exercise, and without otherwise disrupting the rhythm of the exercise.

The foregoing description of exemplary embodiments of the invention has been presented for the purpose of illustration; it is not intended to be exhaustive or to limit the invention to the precise forms disclosed. The description and drawings are, accordingly, to be regarded in an illustrative rather than a restrictive sense. The language used in the specification has been principally selected for readability and instructional purposes. It is therefore intended that the scope of the invention be limited not by this detailed description and drawings, but rather by any claims that issue based on this disclosure. It will be evident that various modifications and changes may be made thereto without departing from the broader spirit and scope of the invention as set forth in the claims.

What is claimed is:

1. A quick release weight retaining system comprising:

a first weight retainer removably mountable to a weight support member, the first weight retainer comprising a first engaging apparatus, the first engaging apparatus configured to releasably retain a first weight; and

a first trigger coupled to the first engaging apparatus configured to release the first weight when the first trigger is activated.

2. The quick release weight retaining system of claim **1**, further comprising a second weight retainer removably mountable to the weight support member, the second weight retainer comprising a second engaging apparatus, the second engaging apparatus configured to releasably retain a second weight.

3. The quick release weight retaining system of claim **2**, the second engaging apparatus configured to release the second weight when the first trigger is activated.

4. The quick release weight retaining system of claim **2**, further comprising a second trigger, the second engaging apparatus configured to release the second weight when the second trigger is activated.

5. The quick release weight retaining system of claim **1**, wherein the first engaging apparatus is further configured to receive the first weight to retain the first weight when the first weight is pushed against the first engaging apparatus.

6. The quick release weight retaining system of claim **5**, further comprising a collar configured to be in an open state and alternatively in a closed state, the collar substantially aligned with the opening, wherein, when the collar is set to the closed state, the collar facilitates fixing the first weight retainer to the weight support member.

7. The quick release weight retaining system of claim **1**, wherein the first engaging apparatus is further configured to retain the first weight against a force of gravity during repetitive movement of the weight support member.

8. The quick release weight retaining system of claim **1**, further comprising an opening in the first weight retainer, the opening being substantially circular in shape, the opening configured to facilitate the first weight retainer being slidably mounted to the weight support member.

9. A quick release weight retaining system comprising:

a first weight retainer removably mountable to a weight support member, the first weight retainer comprising a first engaging apparatus;

a first weight configured to releasably engage the first engaging apparatus;

a first trigger coupled to the first engaging apparatus configured to release the first weight when the first trigger is activated.

10. The quick release weight retaining system of claim **9**, further comprising a second weight retainer removably mountable to the weight support member, the second weight retainer comprising a second engaging apparatus, the second engaging apparatus configured to releasably retain a second weight.

11. The quick release weight retaining system of claim **10**, the second engaging apparatus configured to release the second weight when the first trigger is activated.

12. The quick release weight retaining system of claim **10**, further comprising a second trigger, the second engaging apparatus configured to release the second weight when the second trigger is activated.

13. The quick release weight retaining system of claim **9**, further comprising an opening in the first weight retainer, the opening being substantially circular in shape, the opening configured to facilitate the first weight retainer being slidably mounted to the weight support member.

14. The quick release weight retaining system of claim **13**, further comprising a collar configured to be in an open state and alternatively in a closed state, the collar substantially aligned with the opening, wherein, when the collar is set to the closed state, the collar facilitates fixing the first weight retainer to the weight support member.

15. The quick release weight retaining system of claim **9**, wherein the first weight comprises at least one engaging element configured to engage with the first engaging apparatus to retain the first weight against a force of gravity during repetitive movement of the weight support member.

16. The quick release weight retaining system of claim **9**, wherein the first engaging apparatus is further configured to receive the first weight to retain the first weight when the first weight is pushed against the first engaging apparatus.

17. A quick release weight retaining system comprising:

a first weight retainer mounted to a barbell, the first weight retainer comprising a first engaging apparatus, the first engaging apparatus configured to releasably retain a first weight; and

a first trigger coupled to the first engaging apparatus configured to release the first weight to a force of gravity when the first trigger is activated, wherein the first weight falls away from the barbell upon release.

18. The quick release weight retaining system of claim **17**, wherein the first trigger is further configured to release a second weight from a second engaging apparatus to the

force of gravity when the first trigger is activated, wherein the second weight falls away from the barbell upon release.

19. The quick release weight retaining system of claim **17**, further comprising a second trigger coupled to a second engaging apparatus, the second trigger configured to release a second weight from the second engaging apparatus to the force of gravity when the second trigger is activated, wherein the second weight falls away from the barbell upon release.

20. The quick release weight retaining system of claim **17**, wherein the first engaging apparatus is further configured to receive the first weight to retain the first weight when the first weight is pushed against the first engaging apparatus.

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